

ABSTRACT OF THE DISCLOSURE

Disclosed is a semiconductor device comprising a semiconductor substrate and a circuit element using an insulating film formed on the semiconductor substrate.

5 The insulating film contains a silicon compound containing at least one element selected from the group consisting of an oxygen and a nitrogen, and a metal compound containing a metal other than silicon and at least one element selected from the group consisting of

10 an oxygen and a nitrogen. Nano-crystals are formed in the insulating film. The size of the nano-crystal is small enough to permit observation of a polycrystalline ring as a diffraction image when an electron beam having a beam diameter of the nanometer order is

15 incident in parallel to the insulating film surface.

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